

## CURRENT LITERATURE.

### Natural History of Plants.

The completion of Oliver's translation of Kerner's "Natural History of Plants"<sup>1</sup> has been very prompt, and continues the excellent typographical work and illustrations of the preceding parts, which have been reviewed in this journal (20: 327.) The subjects treated in the present parts are styled "the genesis of plant offspring," and "the history of species." Under the latter title the subdivisions are "the nature of species," "alternation in the form of species," "the origin of species," "the distribution of species" and "the extinction of species." These broad subjects are treated in the author's usual interesting style, and a large amount of useful information is brought together. In the first part of the second volume, however, in considering the subject of fertilization and fruit production, we are treated to several surprises. The author is very full of pleasant information concerning the general subject of pollination, and treats it with a fullness apparently out of all proportion to the other subjects, but of this we do not complain, for Kerner is at his best when treating of ecological subjects. But when fertilization and the fruit are considered<sup>2</sup> the first impression is that the ancient date of the German text has to do with the presentation. Such is not the case, however, for so recent a thing as chlamydomy is discussed, and a closing chapter on alternation of generations is modern and proper enough; so different, in fact, from the body of the work, that it seems as if written by an entirely different author. Where the organs and processes of reproduction are spoken of in detail, there seems to be no conception of recent morphology; in fact the phanerogams and cryptogams stand wholly unrelated; the pollen grain contains the "fertilizing substance" and is the equivalent of the antheridium; the ovule finds its morphological equivalent in a bud; the male fertilizing substance passes by osmosis to the "ooplasm;" and so on. The term "fruit" is not that of ordinary usage. It is defined as "a structure which is the product of fertilization, and at the same time constitutes the first step towards the renewal of the fertilized plant." At the same time the term archegonium is discarded and

<sup>1</sup>KERNER VON MARILAUN, ANTON: The natural history of plants, their forms, growth, reproduction, and distribution. From the German by F. W. Oliver. Vol. II. Roy. 8° pp. iv + 983. *pl. 9-16. figs. 189-482.* New York: Henry Holt & Co., 1895. \$7.50.

<sup>2</sup>See also on this part Professor MacMillan's criticisms, p. 20. The reviewer wrote entirely without knowledge of this paper.—EDS.

“fruit-rudiment” or “amphigonium” used in its stead, antheridia and fruit-rudiments being the usual association of terms. The archeogonium, that is “fruit-rudiment,” is said to be a multicellular sheath about the oogonium, and still it is the fruit-rudiment that is fertilized and develops into the fruit. It seems that the “fruit” of moss, which is the embryo of the sporogonium, develops “brood-cells” (the spores), and yet “it is best to look upon the formation of fruit as being complete as soon as fertilization has taken place; from this moment the ooplasm must be considered to be an embryo, and its envelopes to be fruit coats.” Just what the conception of “fruit” is in the author’s mind the reviewer has failed to discover. “The tissue produced from a macrospore in the *Selaginellæ* has been compared to the ovule as it occurs in the phanerogams” is certainly a curious statement, as also “these two (polar nuclei) approach one another at about the moment of fertilization.” Evidently the author has a theory of fertilization and fruit formation to work out, but it is so at variance with our current notions of morphology that it seems to result in utter confusion. How such a presentation is made consistent with a short account of alternation of generation given at the close of the volume is inexplicable. In this account the cumbrous ideas and terminology are abandoned and archeogonium, gametophyte, and sporophyte appear in logical order throughout the whole series of plants, including the phanerogams. In his preface to the chapters on reproduction the author assures us that “hitherto the subjects of fruit-formation and of the alternation of generations in their relation to the history of plants have remained unrecognized and unelucidated. In one of the following sections of this volume an attempt will be made to solve this great mystery.”

In spite of the strange presentation of fertilization, the book remains, as was stated in the outset, a most valuable summary of ecological facts and a model of interesting style in presentation.

#### Minor Notices.

THE MOST RECENT “Contribution” from the Botanical Division of the Department of Agriculture contains a report by John M. Coulter and J. N. Rose upon Mexican Umbelliferæ, mostly from Oaxaca, being based upon collections of C. G. Pringle and E. W. Nelson. Special attention was given to the group by these collectors, and the result is that Oaxaca has been discovered to contain an unusually rich umbelliferous flora. But ten species had been reported from that state, while the collections of Pringle and Nelson contain forty-two species, twenty-three of which are new. Among the new species, four new

genera are represented, although two of them (*Neogoezia* Hemsley and *Deanea* Coulter & Rose) have been published in anticipation of the present contribution. The other two are named *Neonelsonia* and *Coaxana*. Species outside of Oaxaca bring up the number of new ones described to twenty-seven. Altogether, this forms the most valuable contribution to our knowledge of Mexican Umbelliferæ.

In addition to descriptions of new genera and species, and critical notes upon the other species collected, there is a somewhat detailed account of the topography of the stations explored, and a revision of *Museniopsis*, a genus now far better understood, and containing at least eleven species, the Mexican forms heretofore referred to *Eulophus* being included.

A second part of the "Contribution" is by Mr. Rose, who presents new or noteworthy plants from Mexico and the United States, including descriptions by Baker fil. and Cogniaux. The contribution also contains twelve plates.

AN EXCELLENT experimental and critical study of some of the fungi parasitic upon insects has been made by Mr. Rufus H. Pettit,<sup>1</sup> of Cornell University. The material for the study was largely found in the vicinity of Ithaca, N. Y., and yielded a number of new forms and species. In all cases the fungus was transferred from the insect on which it was found to nutrient media. Several media were used, but more especially agar and potato. The forms studied were *Cordyceps clavulata* (Schw), Ellis on scale insects of the genus *Lecanora* *C. militaris* (L.) Lk., *C. melolonthæ* (Tul.) Sacc. on a white grub, the larva of the *Lachnosterna*, *Isaria farinosa* (Dicks.) Fr. on an arctiid cocoon, *I. tenuipes* Peck on pupæ of species of arctiids, *I. anisopliæ Americana* n. var. on wireworms, *Agriotes mancus*, *I. anisopliæ* (Metch.) received from France, *I. densa* (Lk.) Fr., also from France, *I. vexans* n. sp., on a larva of *Lachnosterna*, *Sporotrichum globuliferum* Speg. on a carabid beetle, on chinch-bug and on a vespa, and *S. minimum* Speg. on a black ant of the genus *Camponotus*. A bibliography of 76 numbers is appended. Eleven good plates illustrate the gross and minute structure of the fungi, and the appearance of the artificial cultures. The paper is a valuable contribution to our knowledge of insect parasites and to the possibility of using them to arrest their destructive increase.

A CONTRIBUTION from the National Herbarium, just published, presents a report on a collection of plants made by J. H. Sandburg and assistants in northern Idaho in 1892. The determinations have been

<sup>1</sup>PETTIT, RUFUS H.—Studies in artificial cultures of entomogenous fungi. Bull. Cornell Exper. Station. 97: 339-378. pl. 1-11. July, 1895.

made by Mr. John Holzinger, assisted by specialists in various groups. The region of northern Idaho is one of great botanical interest and has been of late years contributing many novelties. A few species are described, not so many perhaps as were expected, but many of the plants are of great interest. As a matter of nomenclature it may be worth while mentioning a new Cardamine which is described as *C. Leibergii* and figured as *C. Sandbergii*. Just which of these names has the "right of way" may be a question.

THE FOURTH PART of John Donnell Smith's "Enumeration of Guatemalan Plants" has been issued. In this enumeration not only are Guatemalan plants included, but also numbers from other republics of Central America. The list is printed to accompany the distribution of sets, and represents the work of several American and European botanists. Following the list are reprints of these descriptions and thirteen Meisel plates. Captain Smith cannot be too strongly commended for his vigorous development of our knowledge of Central American plants, to which he contributes largely of his time and means.